ENDOSYMBIOTIC CILIATES INHABITING HERBIVOROUS AUSTRALIAN MARSUPIALS

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Although endosymbiotic ciliates have been reported in macropodid marsupials for over thirty years, none were formally described until recently. The present study examined samples of stomach content from 84 animals belonging to 15 species of marsupials for the presence of endosymbiotic ciliates. Ciliate morphology was determined by live observation, methyl-green staining, silver impregnation and scanning electron microscopy. The ciliates found belonged to four distinct families, the Isotrichidae (in 65% of animals), Macropodiniidae (38%), Cycloposthiidae (10%) and a new family (36%). Ciliate communities were composed predominantly of novel isotrichid ciliates. The Macropodiniidae Dehority, 1996 was redescribed based on new kinety features revealed by silver impregnation and electron microscopy. A *Cycloposthium* sp. was detected for the first time in a marsupial host, as this genus typically inhabits equines this may represent a host switching event. The new family is characterised by the possession of longitudinal pellicular ridges and a large irregular bush of cytopharyngeal rods. These findings suggest that endosymbiotic ciliates have been intimately associated with herbivorous Australian marsupials since early in their evolution and represent a unique, diverse and highly endemic fauna.